



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/519,339	08/15/2005	Michinari Miyagawa	KITO5.001APC	9314

20995 7590 03/07/2008  
KNOBBE MARTENS OLSON & BEAR LLP  
2040 MAIN STREET  
FOURTEENTH FLOOR  
IRVINE, CA 92614

EXAMINER
----------

NGUYEN, KHANH TUAN

ART UNIT	PAPER NUMBER
----------	--------------

1796

NOTIFICATION DATE	DELIVERY MODE
-------------------	---------------

03/07/2008

ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

jcartee@kmob.com  
eOAPilot@kmob.com

<b>Office Action Summary</b>	<b>Application No.</b> 10/519,339	<b>Applicant(s)</b> MIYAGAWA ET AL.	
	<b>Examiner</b> KHANH T. NGUYEN	<b>Art Unit</b> 1796	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 19 February 2008.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-4 and 6-8 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-4 and 6-8 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)          | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Response to Amendment***

1. The amendment filed 02/19/2008 is entered and acknowledged by the Examiner. Claims 1-4 and 6-8 are currently pending in the instant application. Claim 5 have been canceled.
2. Applicant's request for reconsideration of the finality of the rejection of the last Office action is persuasive and, therefore, the finality of that action is withdrawn.
3. The rejection of claim 1 under 35 U.S.C. 102(b) as being anticipated by Knobel et al. (U.S Pat. 5,110,669) is withdrawn in view of Applicant's amendment and/or remark. The rejection of claims 1-8 under 35 U.S.C. 103(a) as being unpatentable over Nakazawa et al. (U.S Pat. 6,671,165) in view of Miyamoto (JP Pub. 2000-012388) is withdrawn in view of Applicant's amendment and/or remark.

### ***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1-4 and 6-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wani (U.S. Pat. 5,682,288 hereinafter, "Wani") in view of Maxfield et al. (U.S. Pat. 4,915,985 hereinafter, "Maxfield").

Wani teaches an electric double layer capacitor comprising of a low resistance electrode 1 (Col. 1, lines 53-57) is laminated over a collector layer 2 (Fig. 1). Wani further teaches the low resistance electrode layer 1 comprises of electrically conductive particles and polymeric matrix such as polytetrafluoroethylene (PTFE) binder (Col. 2, lines 18-23). Wani also teaches the said electrically conductive particles includes carbon fibers, activated carbon fibers, graphite whiskers, metal fiber, and the like (Col. 4, lines 17-21) in an amount of 1-30 wt. % with the remaining balance of the composition is PTFE (i.e. 99-70 wt.%) (Col. 4, lines 29-33). The electrically conductive particles having a fiber diameter in the range of 0.1 to 50 micrometers and a fiber length in the range of 1 to 1000 micrometers (Col. 4, lines 22-24). Wani teaches a low resistance electrode layer 1 comprising of similar ingredients (carbon fiber and resin) within the disclosed ratio ranging from 15:85 to 85:15 (specification page 13, lines 11-12). Thus, one having an ordinary skill in the art would have had a reasonable expectation for formulating an electrode layer having a low volume resistance within the claimed volume resistance ranges because Wani teaches a low resistance layer comprising of similar ingredients within the disclosed proportion.

The different between the instant application and Wani reference is that Wani failed to suggest a collector layer 2 containing a resin and a conductive agent.

In an analogous art, Maxfield teaches a current collector substrate containing finely divided metal filler coated with a polymer to prevent corrosion and provide resistance in a battery (Col. 2, line 65 to Col. 3, line 7).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to arrive at the claimed laminate layers by laminating a low resistance layer 1 of Wani onto a current collector layer of Maxfield containing metal or graphite filler in polymer in order to provide prevent corrosion in a battery.

6. Claims 1-4 and 6-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takenaka et al. (U.S. Pat. 3,830,656 hereinafter, "Takenaka") in view of Tsukakoshi et al. (U.S. Pat. 6,294,257 hereinafter, "Tsukakoshi").

Takenaka teaches a resistor film comprising of a resistor base (support layer) containing an electrically conductive material such as carbon black, graphite and silver dust and resin (Col. 2, lines 9-21). Takenaka further teaches forming a conductive coating on said resistor base by applying a solution containing resin and carbon black, graphite, silver dust and the like onto the said resistor base (Col. 2, lines 22-35).

Takenaka teaches an electrically conductive material such as powder graphite and silver dust are conveniently used in manufacturing of resistor film having low volume resistivity (Col. 3, lines 49-60).

The difference between the instant application and Takenaka reference is that Takenaka failed to explicitly suggest or teach the resistor film having low volume resistivity in the range of 0.1 to 1.0 ohms-cm in the thickness direction.

However, Tsukakoshi teaches an electrically conductive film comprising of a thermoplastic resin and conductive filler such as carbon black, graphite, powdery or fibrous metal or metal oxide (Col. 6, lines 52-64) having a low volume resistance of 0.1 to 1.0 ohms-cm in the direction perpendicular to the film plane (i.e. thickness direction) (Col. 3, lines 30-45). Tsukakoshi further teaches a method of adjusting the volume resistance of the film by adjusting the concentration conductive fillers (Col. 3, lines 42-46) and conductive fillers of having a specific surface area to achieve a desirable volume resistance (Col. 6, lines 56-60).

Therefore, one of ordinary skill in the art would have had a reasonable expectation of success of formulating a resistor film of Takenaka having a low volume resistance in the range of 0.1 to 1.0 ohms-cm in the thickness direction (direction perpendicular to the film plane) as suggested by Tsukakoshi because both Takenaka and Tsukakoshi disclose a similar conductive layer comprising of similar ingredients such as conductive filler (carbon black, graphite or metal) dispersed in a resin matrix. Similar composition is generally expected to have similar properties. Moreover, one having an ordinary skill in the art would have had a reasonable expectation of success for formulating a multi-layer film wherein the outmost layer has a lower volume resistance (e.g. 1/5 or less) in the thickness direction than the conductive substrate by incorporating smaller amount of conductive fillers that has a low specific surface area into the substrate layer to yield a high volume resistance substrate layer (at least 5 times higher) as suggested by Tsukakoshi.

***Response to Arguments***

7. Applicant's arguments with respect to claims 1-4 and 6-8 have been considered but are moot in view of the new ground(s) of rejection.

***Conclusion***

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to KHANH T. NGUYEN whose telephone number is (571)272-8082. The examiner can normally be reached on Monday-Friday 8:00-5:00 EST PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Randy Gulakowski can be reached on (571) 272-1302. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 1796

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Mark Kopec/  
Primary Examiner, Art Unit 1796

KTN  
02/24/2008